UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

08/817,595

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
08/817,595	04/22/97	TURIANO A	MARGI-15

EXAMINER

HM21/0331

MILLEN WHITE ZELANO & BRANIGAN
ARLINGTON COURTHOUSE PLAZA I
SUITE 1201
2200 CLARENDON BOULEVARD
ARLINGTON VA 22201

BANSAL, G

ART UNIT	PAPER NUMBER
1642	8

DATE MAILED: 03/31/98

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

☑ Responsive to communication(s) filed on 4/22/97

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire —3— month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☑ Claim(s) 1-16 is/are pending in the application.
Of the above, claim(s) _____ is/are withdrawn from consideration.
☐ Claim(s) _____ is/are allowed.
☑ Claim(s) 1-16 is/are rejected.
☐ Claim(s) _____ is/are objected to.
☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
☐ The specification is objected to by the Examiner.
☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☑ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☑ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☑ received.
☐ received in Application No. (Series Code/Serial Number) _____.
☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of Reference Cited, PTO-892
☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
☐ Interview Summary, PTO-413
☐ Notice of Draftperson's Patent Drawing Review, PTO-948
☐ Notice of Informal Patent Application, PTO-152

DETAILED ACTION

1. The disclosure is objected to because of the following informalities: The claims define the scope of an invention and must particularly point out and distinctly claim the invention, and must be a single sentence starting "I (We) claim:"or "What is claimed is:"

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-7 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the stimulation of immune responses in the rat system, does not reasonably provide enablement for all organisms. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. The claims are drawn to a pharmaceutical composition comprising MHC molecules extracted from animal tissues or cells for the treatment of cancer or viral pathologies.

The specification teaches the extraction of MHC molecules from animal tissues or cells, and administration of these molecules to tumor bearing animals or HIV infected cell cultures.

In determining the enablement of the instant claims, some of the factors that were considered were 1) nature of the invention, b) state of the prior art, c) level of predictability, d)

amount of direction given, e) existence of working examples, f) quantity of experimentation to make the invention.

The nature of the invention is such that the composition comprising the MHC molecule of the instant claims must be able to induce an immune response in an organism. There is no teaching in the specification as to how to screen for organisms where MHC molecules are present and which molecules can be used to induce an immune response, and there is also no guidance as to how to monitor for the immune response in any organism. It is not clear if all organisms possess an immune system and related MHC molecules. The specification discloses killing of cells (tumor cells in vivo or HIV infected cells in vitro), but does not provide any evidence of an immune response as tumor cells could be killed by productionof a toxic substances. There is no clear evidence of an immune related phenomena being generated. Thus one of skill in the art would be forced into undue experimentation to practice the invention as broadly claimed .

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. Claim 1-7, 10, 14 are indefinite in the recitation of "stimulation of the immune response or system" as the metes and bounds of "stimulation" or "immune response" is not known.

B. Claim 1 is indefinite and ambiguous in reciting animal or human and cells or tissues. It is generally known that humans are animals and that cells are in tissues.

C. Claims 4, 9, 11 are indefinite in that it is not clear what is meant by "different origin".

6. Claims 8-11 provide for the use of histocompatibility molecules as a medicament, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 8-11 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd.* v. *Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-3, 8, 9, 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Stott et al (1994) .

The claims are drawn to a pharmaceutical composition comprising MHC molecules extracted from animal tissues or cells for the stimulation of the immune response or for the treatment of cancer.

Stott et al discloses an MHC class I antigen for use as a vaccine for HIV infection (see page 1, line 33 to page 2, line 4 and example 2 and claims). Stott doesn not teach specifically using

detergents such as NP-40 to extract MHC antigens. Abeta et al teach methods to solubilize and extract cell membrane MHC molecules. The intended use lends no patentable weight to the composition.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stott et al (1994) in view of Labeta et al (1988).

The claims are drawn to a pharmaceutical composition comprising MHC molecules extracted from animal tissues or cells for the treatment of cancer.

Stott et al discloses an MHC class I antigen for use as a vaccine for HIV infection (see page 1, line 33 to page 2, line 4 and example 2 and claims). Stott doesn not teach specifically using detergents such as NP-40 to extract MHC antigens. Abeta et al teach methods to solubilize and extract cell membrane MHC molecules. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to use the teachings of Stott et al to use MHC antigens as vaccines for stimulation of the immune system, and t use the teachings of Labeta et al to use non-denaturing detergents for the intact isolation of MHC molecules. With respect to the limitation of dialyzing against PBS and using a membrane with a cutoff of about 10kD, it would be obvious to one of ordinary skill in the art to resuspend the molecules in a pharmaceutically

acceptable buffer such as PBS, and to remove all smaller molecular weight proteins, salts etc, so as to have as close as possible to the size of the MHC molecules as is required. One of ordinary skill in the art would have been motivated to do so in view of the reasonable expectation of success in obtaining an immune response. Though Stott et al demonstrated MHC antigens as vaccines against HIV, since tumor cells also express increased class II antigens, the teachings of Stott would apply for vaccines against cancer also.

11. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stott et al (1994).

The claims are drawn to a a method of stimulation of an immune system comprising administering MHC molecules extracted from animal tissues or cells for the treatment of cancer pathologies.

Stott et al discloses an MHC class I antigen for use as a vaccine for HIV infection (see page 1, line 33 to page 2, line 4 and example 2 and claims). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to use the teachings of Stott et al to use MHC antigens as vaccines for stimulation of the immune system. One of ordinary skill in the art would have been motivated to do so in view of the reasonable expectation of success in obtaining an immune response. Though Stott et al demonstrated MHC antigens as vaccines against HIV, it would be obvious to use the same methods for treating tumors since tumor cells also express increased class II antigens, as the teachings of Stott would apply for vaccines against cancer also.

12. Claim 6 is drafted in the product-by-process format. The references do not describe the production of theMHC molecules using methods identical to that recited in claim 6. However, the recitation of a process limitation in claim6 is not viewed as positively limiting the claimed product, absent a showing that the process of making recited MHC molecules in claim 6 imparts a

novel or unexpected property to the claimed product, as it is assumed that equivalent products are obtainable by multiple routes. The burden is upon the applicants to establish a patentable distinction between the claimed and referenced products.

13. No claim is allowed.

14. Papers related to this application may be submitted to Group 1640 by facsimile transmission. Papers should be faxed to Group 1640 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CM1 Fax Center telephone number is (703) 308-4242 or (703) 305-3014.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geetha P. Bansal whose telephone number is (703) 305-3955. The examiner can normally be reached on Mondays to Thursdays from 7:00am to 4:30pm and alternate Fridays from 7:00am to 3:30pm. A message may be left on the examiner's voice mail service.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lila Feisee, can be reached on (703) 308-2731.

16. Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [**lila.feisee@uspto.gov**].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive

information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

17. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Geetha P. Bansal

March 18, 1998.

LILA FEISEE
SUPERVISORY PATENT EXAMINER